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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/653,037	08/29/2003	Frank W. Barresi	006401.00033	1539
22908	7590	04/11/2007	EXAMINER	
BANNER & WITCOFF, LTD. TEN SOUTH WACKER DRIVE SUITE 3000 CHICAGO, IL 60606			MAIER, LEIGH C	
			ART UNIT	PAPER NUMBER
			1623	
SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE		
3 MONTHS	04/11/2007	PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/653,037	BARRESI ET AL.	
Examiner	<b>Art Unit</b>		
Leigh C. Maier	1623		

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)  Responsive to communication(s) filed on 08 January 2007.

2a)  This action is **FINAL**.                            2b)  This action is non-final.

3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## **Disposition of Claims**

4)  Claim(s) 109-128 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5)  Claim(s) \_\_\_\_\_ is/are allowed.  
6)  Claim(s) 109-128 is/are rejected.  
7)  Claim(s) \_\_\_\_\_ is/are objected to.  
8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

9)  The specification is objected to by the Examiner.

10)  The drawing(s) filed on \_\_\_\_\_ is/are: a)  accepted or b)  objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a))

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1)  Notice of References Cited (PTO-892)  
2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3)  Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_

4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_

5)  Notice of Informal Patent Application

6)  Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Status of the Prosecution***

Claims 109-128 are pending. Any objection or rejection not expressly repeated has been withdrawn.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 109-115 and 126 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shibanai et al (US 4,677,177) in view of Ishida et al (US 4,655,125).

Shibani teaches the hydrogenation of maltooligosaccharides—derived from the hydrolysis of starch—with a nickel catalyst at a temperature of about 70° to 160°C and 100 to 200 Kg/cm<sup>2</sup> (about 1425-2850 psi) of hydrogen. The DE of the final product is zero. See col 6, lines 42-62. The reference is silent regarding the use of an “activated” nickel catalyst. Neither does it particularly describe the disposition of the final DP profile relative to the initial profile.

Ishida teaches that Raney Ni (by definition a nickel-aluminum alloy that is activated by treatment with NaOH) is known to have utility as a catalyst for the hydrogenation of a variety of starch hydrolysis products, including maltodextrins. This hydrogenation proceeds without isomerization or decomposition. See col 3, lines 36-40.

It would have been obvious to one having ordinary skill in the art at the time the invention was known to use Raney nickel for the hydrogenation of maltooligosaccharides—having first derived said oligosaccharides from the hydrolysis of starch—to a DE of zero for the art-disclosed utility with a reasonable expectation of success because Ishida had suggested this process. It would be expected that the final DP profile is essentially the same as the initial profile also because of the Ishida teaching. It would be within the scope of the artisan to optimize the temperature and pressure through routine experimentation.

Regarding the limitation “said plurality of malto-oligosaccharide comprising a maltodextrin,” the examiner does not see this as being limiting because these terms appear to be used interchangeably or broadly overlapping in the art. See for example, Inglett (US 5,266,467) at col 1, lines 10-12.

Claims 109-116, 118-124 and 126-128 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shibanai et al (US 4,677,177) in view of Ishida et al (US 4,655,125) and further in view of Chao et al (US 4,322,569).

Shibanai and Ishida teach as set forth above. The references do not teach the use of a catalytic bed, a particular pH range or the lower hydrogen pressure limitations recited in the claims.

Chao teaches the hydrogenation of monosaccharides with a high activity nickel catalyst in a fixed bed process. The reference further teaches a pH range of 7 to 13 and hydrogen pressure of 500-2000 psig. See abstract.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the process made obvious by Shibanai and Ishida by the use of a catalytic bed for the hydrogenation process. In the absence of unexpected results, it would be within the scope of the artisan to select any apparatus known to have utility for this process. It would be further obvious to optimize the result effective variables, such as pH and pressure, in line with similar hydrogenation processes known in the art.

Claims 109-128 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shibanai et al (US 4,677,177) in view of Ishida et al (US 4,655,125) and further in view of Chao et al (US 4,322,569) and Borden (US 5,601,863).

Shibanai, Ishida and Chao teach as set forth above. The references do not teach hydrogenation at a pH lower than 7 or the full scope of the metal catalysts recited.

Borden teaches the use of a variety of metal catalysts, including Raney nickel, for the hydrogenation of polydextrose and polymaltose. See col 3, beginning line 42, continuing through the end of col 4 and examples. The preferred pH range for the hydrogenation is about 3 to 9, and the pressure range is about 50 psi to about 3000 psi. It is noted that polymaltose, or dextrin, differs from maltodextrin/maltooligosaccharides in that the DE of the unhydrogenated form of the former is lower, but their basic  $\alpha$ -1,4 structure is the same.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to hydrogenate a maltooligosaccharide with a metal catalyst for the art disclosed utility and further discussed above. It would be within the scope of the artisan to select any metal catalyst known for this utility. It would be further within the scope of the artisan to optimize result effective variables according to teachings regarding similar hydrogenation processes known in the art with a reasonable expectation of success.

***Examiner's hours, phone & fax numbers***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leigh Maier whose telephone number is (571) 272-0656. The examiner can normally be reached on Tuesday, Thursday, and Friday 7:00 to 3:30 (ET).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ms. Anna Jiang (571) 272-0627, may be contacted. The fax number for Group 1600, Art Unit 1623 is (571) 273-8300.

Visit the U.S. PTO's site on the World Wide Web at <http://www.uspto.gov>. This site contains lots of valuable information including the latest PTO fees, downloadable forms, basic search capabilities and much more. Information regarding the status of an application may be obtained from the Patent Application Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished application is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov> Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197.

*Leigh C. Maier*

Leigh C. Maier  
Primary Examiner  
March 30, 2007